WHAT IS CLAIMED IS:

1. A mammalian lipo-derived stem cell substantially free of mature adipocytes.

2. The cell of claim 1, which can be cultured in DMEM + about 10% fetal bovine serum for at least 15 passages without differentiating.

3. The cell of claim 2, which has two or more developmental phenotypes selected from the group of developmental phenotypes consisting of adipogenic, chondrogenic, cardiogenic, dermatogenic, hematopoetic, hemangiogenic, myogenic, nephrogenic, neurogenic, neuralgiagenic, urogenitogenic, osteogenic, pericardiogenic, peritoneogenic, pleurogenic, splanchogenic, and stromal developmental phenotypes.

4. The cell of any of claims 1-3, which is human.

5. The cell of any of claims 1-4, which is genetically modified.

6. The cell of any of claims 1-5, which has a cell-surface bound intercellular signaling moiety.

7. The cell of any of claims 1-5, which secretes a hormone.

8. The cell of claim 7, wherein the hormone is selected from the group of hormones consisting of cytokines and growth factors.

9. A defined cell population comprising a cell of any of claims 1-8.

10. The defined cell population of claim 9, which is heterogeneous.

11. The defined cell population of claim 9 or 10, further compressing a stem cell selected from the group of cells consisting of neural stem cells (NSC), hematopoetic stem cells (HPC), embryonic stem cells (ESC) and mixtures thereof.

12. The defined cell population of claim 9, which consists essentially of cells according to any of claims 1-8.

13. The defined cell population of claim 9 or 12, which is substantially homogenous.

14. The defined cell population of claim 13, which is clonal.

15. A defined cell population consisting essentially of mesodermal stem cells (MHC), connective tissue stem cell (CTSC), or mixtures thereof, wherein the population is clonal.

16. The population of claim 15, wherein the stem cells have two or more developmental phenotypes selected from the group of developmental phenotypes consisting of adipogenic, chondrogenic, cardiogenic, dermatogenic, hematopoetic, hemangiogenic, myogenic, nephrogenic, neurogenic, neuralgiagenic, urogenitogenic, osteogenic, pericardiogenic, peritoneogenic, pleurogenic, splanchogenic, and stromal developmental phenotypes.

17. A lipo-derived lattice comprising adipose tissue extracellular matrix matter substantially devoid of cells.

18. The lipo-derived lattice of claim 17, comprising a human protein, proteoglycan, glycoprotein, hyaluronin, or fibronectin molecule.

19. The lipo-derived lattice of claim 17 or 18, comprising a collagen selected from the group of collagens consisting of type I, type II, type III, type IV, type V, type VI collagen.

20. The lipo-derived lattice of any of claims 17-19, comprising a hormone.

21. The lipo-derived lattice of claim 20, wherein the hormone is selected from the group of hormones consisting of cytokines and growth factors.

22. The lipo-derived lattice of any of claims 17-21, which is substantially anhydrous.

23. The lipo-derived lattice of any of claims 17-22, which is lyophilized.

24. The lipo-derived lattice of any of claims 17-21, which is hydrated.

25. A kit comprising the lipo-derived lattice of any of claims 17-24 and one or more components selected from the group of components consisting of hydrating agents, cell culture substrates, cell culture media, antibiotic compounds, and hormones.

26. A composition comprising a cell and the lipo-derived lattice of any of claims 17-24.

27. A composition comprising the cell of any of claims 1-8 and a biologically compatible lattice.

28. A composition comprising the population of any of claims 9-16 and a biologically compatible lattice.

29. The composition of claim 27 or 28, wherein the lattice comprises polymeric material.

30. The composition of claim 29, wherein the polymeric material is formed of polymer fibers as a mesh or sponge.

31. The composition of claim 29 or 30, wherein the polymeric material comprises monomers selected from the group of monomers consisting of glycolic acid, lactic acid, propyl fumarate, caprolactone, hyaluronan, hyaluronic acid and combinations thereof.

32. The composition of any of claims 29-31, wherein the polymeric material comprises proteins, polysaccharides, polyhydroxy acids, polyorthoesters, polyanhydrides, polyphosphazenes, synthetic polymers or combinations thereof.

33. The composition of any of claims 29-32, wherein the polymeric material is a hydrogel formed by crosslinking of a polymer suspension having the cells dispersed therein.

34. The composition of any of claims 29-33, wherein the lattice further comprises a hormone selected from the group of hormones consisting of cytokines and growth factors.

35. The composition of any of claims 29-34, wherein the lattice is the lipo-derived lattice of any of claims 17-24.

36. A method of obtaining a genetically-modified cell comprising exposing the cell of any of claims 1-8 to a gene transfer vector comprising a nucleic acid including a transgene, whereby the nucleic acid is introduced into the cell under conditions whereby the transgene is expressed within the cell.

37. The method of claim 36, wherein the transgene encodes a protein conferring resistance to a toxin.

38. A method of delivering a transgene to an animal comprising (a) obtaining a genetically-modified cell in accordance with claim 36 or 37 and (b) introducing the cell into the animal, such that the transgene is expressed *in vivo*.

39. A method of differentiating the cell of any of claims 1-8 comprising culturing the cell in a morphogenic medium under conditions sufficient for the cell to differentiate.

40. The method of claim 39, wherein the medium is an adipogenic, chondrogenic, cardiogenic, dermatogenic, embryonic, fetal, hematopoetic, hemangiogenic, myogenic, nephrogenic, neurogenic, neuralgiagenic, urogenitogenic, osteogenic, pericardiogenic, peritoneogenic, pleurogenic, and splanchogenic, or stromogenic media.

41. The method of claim 39 or 40, wherein the morphogenic medium is an adipogenic medium and the cell is monitored to identify adipogenic differentiation.

42. The method of claim 39 or 40, wherein the morphogenic medium is a chondrogenic medium and the cell is monitored to identify chondrogenic differentiation.

43. The method of claim 39 or 40, wherein the morphogenic medium is an embryonic or fetal medium and the cell is monitored to identify embryonic or fetal phenotype.

44. The method of claim 39 or 40, wherein the morphogenic medium is a myogenic medium and the cell is monitored to identify myogenic differentiation.

45. The method of claim 39 or 40, wherein the morphogenic medium is an osteogenic medium and the cell is monitored to identify osteogenic differentiation.

46. The method of claim 39 or 40, wherein the morphogenic medium is a stromal medium and the cell is monitored to identify stromal or hematopoetic differentiation.

47. The method of any of claims 39-46, wherein the cell differentiates *in vitro*.

48. The method of any of claims 39-46, wherein the cell differentiates *in vivo*.

49. A method of producing hormones, comprising (a) culturing the cell of claim 7 or 8 within a medium under conditions sufficient for the cell to secrete the hormone into the medium and (b) isolating the hormone from the medium.

50. A method of promoting the closure of a wound within a patient comprising introducing the cell of claim 7 or 8 into the vicinity of a wound under conditions sufficient for the cell to produce the hormone, whereby the presence of the hormone promotes closure of the wound.

51. A method of promoting neovascularization within tissue, comprising introducing the cell of claim 7 or 8 into the tissue under conditions sufficient for the cell to produce the hormone, whereby the presence of the hormone promotes neovascularization within the tissue.

52. The method of claim 51, wherein the tissue is within an animal.

53. The method of claim 51 or 52, wherein the tissue is a graft.

54. The method of any of claims 49-53, wherein the hormone is a growth factor selected from the group of growth factor consisting of human growth factor, nerve growth factor, vascular and endothelial cell growth factor, and members of the TGFβ superfamily.

55. A method of conditioning culture medium comprising exposing a cell culture medium to the cell of any of claims 1-7 under conditions sufficient for the cell to condition the medium.

56. The method of claim 55, wherein the medium is separated from the cell after it has been conditioned.

57. The method of any of claims 36-56, wherein the cell is within a population of any of claims 9-16.

58. A conditioned culture medium produced in accordance with the method of claim 55 or 56.

59. The conditioned culture medium of claim 58, which is substantially free of a cell of any of claims 1-7.

60. A method of culturing a stem cell comprising maintaining a stem cell in the conditioned medium of claim 58 or 59 under conditions for the stem cell to remain viable.

61. The method of claim 60, which further comprises permitting successive rounds of mitotic division of the stem cell to form an expanded population of stem cells.

62. The method of claim 60 or 61, wherein the medium is substantially free of the lipo-derived cells of any of claims 1-7.

63. The method of any of claims 60-62, wherein the medium contains lipo-derived cells of any of claims 1-7.

64. The method of claim 63, wherein a stem cell and a lipo-derived cell are in contact.

65. The method of any of claims 60-64, wherein a stem cell is a hemopoetic stem cell.

66. A method of producing animal matter comprising maintaining the composition of any of claims 18-26 under conditions sufficient for the cells within the composition to expand and differentiate to form the matter.

67. The method of claim 66, wherein the matter comprises a tissue type selected from the group of tissues consisting of adipose, cartilage, heart, dermal connective tissue, blood tissue, muscle, kidney, bone, pleural, and splanchnic tissues, and combinations thereof.

68. The method of claim 66 or 67, wherein the matter comprises more than one tissue type.

69. The method of any of claims 66-68, wherein the matter comprises at least a portion of an animal organ.

70. The method of claim 66-68, wherein the matter comprises at least a portion of an animal limb.

71. The method of any of claims 66-70, wherein the composition is maintained *in vitro*.

72. The method of any of claims 66-70, wherein the composition is introduced into an animal and maintained *in vivo*.

73. An implant comprising the cell of any of claims 1-7.

74. An implant comprising the population of any of 8-13.

75. An implant comprising the lipo-derived lattice of any of claims 14-16.

76. An implant comprising the composition of any of claims 17-26.

77. A kit for isolating stem cells from adipose tissues comprising a means for isolating adipose tissue from a patient and a means for separating stem cells from the remainder of the adipose tissue.

78. The kit of claim 77, further comprising a medium for differentiating the stem cells.

79. The kit of claim 78, wherein the medium is selected from the group of media consisting of adipogenic, chondrogenic, cardiogenic, dermatogenic, embryonic, fetal, hematopoetic, hemangiogenic, myogenic, nephrogenic, neurogenic, neuralgiagenic, urogenitogenic, osteogenic, pericardiogenic, peritoneogenic, pleurogenic, and splanchogenic, and stromogenic media.